

**REMARKS/ARGUMENTS**

The Applicants appreciate the Examiner's finding of allowable subject matter. Applicants believe that the amendments to the claims and the specification as well as the comments that follow will convince the Examiner that the rejections provided in the June 3, 2004 Office Action have been overcome and should be withdrawn.

**I. THE EXAMINER'S REJECTIONS AND RESPONSE**

**A. 35 USC §112**

The Examiner objected to claims 1-2, 4-23, 25-28, 30-53 as being indefinite. In particular the Examiner stated that claims 1, 22 and 42 are unclear as to the structural relationship of the elements with respect to each other. In response, claims 1, 22, and 42 were amended to include the structural relationship of the elements to each other without adding any new matter.

The Examiner objected to claims 2 and 23 as being unclear as to where the toroidal vortex nozzle is vented. Consequently, claims 2 and 23 were amended to include the limitation that the toroidal vortex nozzle is vented between the inner tube and the outer tube as described in Page 32, line 9 of the specification.

Further, the Examiner stated that claims 11-12, 31-32 are unclear as what is meant by "side by side" and "siamese twin" configurations. Therefore, the claims were amended to include that the hose comprises of a plurality of tubes

in a "side by side" or "Siamese twin" configurations as described in Page 43, line 5 in the specification.

The Examiner pointed out that claim 21 has a vocabulary error and as a result was corrected by replacing 'course' with 'coarse.'

Also, the Examiner noted that claims 23, 25-41 have the word 'system' which is not inserted in claim 22. Claim 22 was amended to include the word 'system.'

In addition, the Examiner objected to claims 31-35 as unclear as to where the hose is located with respect to other listed elements. The claims were amended to include the location of the hose which is removably attached at a first end to the toroidal vortex nozzle and removably attached at second end to the housing as described in Page 42, line 11 in the specification.

Further, the Examiner pointed out that claim 43 is unclear as to the structural relationship of the 'collector' with respect to the other previously recited elements; as a result claim 43 has been canceled.

The Examiner objected to claim 50 as being unclear as from what the container is 'removable;' consequently it was amended to include that the container is removable from the centrifugal separator as described in Page 38, line 1 in the specification.

Claim 52 was objected to by the Examiner as being unclear to what purpose 'a plug' is comprised in the container. The word 'removable' was added to clarify the meaning of the plug to be a removable plug used to remove

contents from the dust container as described in Page 40, line 18 in the specification.

As well, claims 50-52 were objected to by the Examiner as being unclear as to whether the 'container' is in addition to that of claim 42 or is the same one. To clarify, the claims were amended to refer to the original container from the independent base claim.

The Examiner objected to claim 53, line 2, 'said fluid delivery means' for lacking proper antecedent basis. As a result amending claim 42 was amended to include a fluid delivery means.

#### **B. 35 USC §102**

The Examiner rejected claims 1, 8-11, 14-16, 20, 22, 27-28, 37 and 40 under 35 USC §102(b) as being clearly anticipated by Ehnert, US. Pat. No 4,884,315. It is a well settled law that in order to anticipate a claim, a single reference must be valid under 35 USC §102 with respect to its critical date and it must teach every element of the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987); see also MPEP §2131. Applicants contend that the prior art cited by the Examiner in the Office Action do not teach each and every element of the claims in the present invention.

Ehnert employs the use of a filter bag as shown in Figure 1 and in Column 2, lines 4-7 while the present invention makes use of a centrifugal dust separator for this purpose as described on Page 30, line 10 of the specification. The Examiner pointed out in Response to

Arguments in the Office Action of June 3, 2004 that claims 1 and 22 recite a 'separation means' taught by Ehnert. Applicants intend for the separation means to be a centrifugal separator. As a result independent claims 1 and 22 were amended from claiming 'separation means' to claiming a 'centrifugal separator.' Dependent claims 7, 10, 17, 18, 20-21, 30, 38-41 were also amended accordingly.

The Examiner also pointed out in the Office Actoin that the present invention discloses an 'optimization' of a concentric system. Ehnert fails to disclose the toroidal vortex nozzle of claims 1 and 22. Instead, Ehnert discloses the use of re-circulated air for the purpose of agitating dust within a carpet at Column 2, lines 59-63. Independent claims 1 and 22 were amended according to the Examiner's comments to include the structural elements of toroidal vortex nozzle. Those structural elements distinguish a toroidal vortex nozzle from the 'regular' recirculating type nozzle disclosed in Ehnert. As a result Ehnert fails to disclose each and every claim limitation of the present invention. Consequently, the Examiner's rejection should be withdrawn.

Next, the Examiner rejected claims 1, 8-11, 14-21, 42, 48 and 53 under 35 USC §102(b) as being clearly anticipated by McCord, U.S. Pat. No. 2,226,630. However, McCord fails to disclose a toroidal vortex nozzle. McCort provides a nozzle with blowing openings and suction openings for the agitation of dust along the surface to be cleaned. In the previous Office Action the Examiner noted that McCord discloses curved surfaces in Fig. 11. In Fig. 11 and Page

3, column 2, line 58 McCord discloses that the plurality of blowing openings (84) are shown curved. However, McCord fails to disclose a guide means comprising an inner fairing disclosed in the present application in Figure 13 and Page 29, line 7. Claims 1 and 22 were amended to include such limitations. Since McCord fails to disclose this amended limitation, the Examiner's rejection should be withdrawn.

Third, the Examiner rejected claims 22 and 38-39 under 35 USC §102(b) as being anticipated by German Pat. No. DE661573. DE661573 does not disclose a toroidal vortex nozzle as required by claim 22.

In addition, it should be noted that, each of the cited references fails to disclose a substantially sealed system. The present invention minimizes the amount of air that leaks sideways from the main flow which provides a substantially sealed system as described in Page 29, line 7 in the specification. Claims 1 and 22 were amended to include this limitation. In contrast, the cited references all disclose systems where certain amount of air escapes from the air delivery duct to the open atmosphere. McCord discloses a cleaning nozzle in Fig. 11 and Page 3, Column 2, line 58 where some air escapes the system through plurality of blowing openings (84). Ehnert discloses a nozzle housing Fig. 2 described in Column 3, line 37 and Fig. 4 described in Column 4, line 27. The nozzle does not comprise a guide means which would prevent air leakage to the environment. The air stream notated by Arrow D, Fig. 2, and Arrow G, Fig. 4 merely show a non sealed system

where filtered air within the air-recirculation duct flowing into the evacuation chamber.

**C. 35 USC §103**

The Examiner has rejected claims 2 and 23 under 35 USC §103(a) as being unpatentable over Ehnert in view of Self, U.S. Pat. No. 4,243,178. The Examiner also rejected claim 2 as unpatentable over McCord in view of Self. Claims 4-5 and 25-26 were rejected under 35 USC §103(a) by the Examiner as being unpatentable over Ehnert in view of Self and Takemoto. Claims 4-5 were further rejected as unpatentable over McCord in view of Takemoto.

The Examiner further rejected claims 6 and 12 under 35 USC §103(a) as being unpatentable over Ehner as in view of knowledge known in the art. The Examiner rejected claims 7 and 12 under 35 USC §103(a) as being unpatentable over Ehnert in view of CA972510. In addition, the Examiner rejected claim 7, 13, and 45 under 35 USC §103(a) as being unpatentable over McCord in view of CA972510. Further, the Examiner rejected claims 12, 43-44, 47 and 49-52 under 35 USC §103(a) as being unpatentable over McCord in view of knowledge know in the art. Claims 30-31 and 34-36 were rejected under 35 USC §103(a) by the Examiner as being unpatentable over Ehnert in view of Inoue et al., U.S. Pat. No. 5,930,864. Finally, the Examiner rejected claim 41 under 35 USC §103(a) as being unpatentable over Ehnert in view of McCord. It is a well settled law that in order for a claimed invention to be obvious either alone or in view of a combination of references, three criteria must be met:

1) there must exist a suggestion or motivation to modify the reference or to combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior art references, when combined, must teach or suggest all of the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP § 2143-2143.03.

Amended claims 1, 22, and 42 should overcome those rejections since neither Enhert not McCord provide a toroidal vortex nozzle as claimed in amended claims 1, 22, and 42. The Examiner cites Self for indicating the use of a vented nozzle. In addition, Takemoto is cited for indicating the use of a rotating brush. CA972510 is cited for use of a hinged nozzle configuration. The Examiner cites Inoue et al. for disclosing an upright-style vacuum housing having a hose for connection between the nozzle and the housing. McCord is cited for use of a coarse mesh trap. The new amended claims 1, 22, and 42 are not anticipated by or made obvious in light of Enhert or McCord. Thus, no combination of McCord, Enhert, Self, Takemoto, CA972510 or knowledge known in the art discloses all of the elements of amended claims 1, 22 or 42. As such, claims 2, 4-7, 12-13, 23, 25-26, 30-31, 34-36, 41, 43-45, 47, 49-52 are in condition for allowance.

In conclusion, Applicants submit that the prior art fails to disclose a toroidal vortex nozzle as claimed in amended claims 1, 22 or 42. Thus, amended claims 1, 22, and 42 and the dependent claims are not anticipated or made obvious by any single prior art reference or any combination thereof.

**D. Double Patenting**

The Examiner rejected claims 42 and 47 under the judicially created doctrine of obviousness-type double patenting as unpatentable over U.S. Pat. No. 6,687,951. Applicants thank the Examiner for pointing this out. Attached is a Terminal Disclaimer to obviate the provisional double patenting rejection.

**II. THE EXAMINER'S OBJECTIONS TO THE DRAWINGS SHOULD BE  
WITHDRAWN**

Regarding the Examiner's comments concerning FIG. 11-12, the figures do not depict prior art but rather a vacuum system that is half of a toroidal vortex and that is not as effective with comparison to the present invention which depicts an effective toroidal vortex vacuum cleaner. Applicants draw the Examiner's attention to Page 28, line 3 of the specification, which discusses a less effective vacuum design and additionally to Page 28, line 19 of the specification, which discusses a half of a toroidal vortex.



Appl. No. 10/050,501  
Amdt. dated November 22, 2004  
Reply to Office action of June 3, 2004

CONCLUSION

In view of the foregoing, Applicants respectfully submit that the present invention represents a patentable contribution to the art, and the application is condition for allowance. Early and favorable action is accordingly solicited.

Date: 11-22-2004

Respectfully submitted,

by, 

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